EXHIBIT A

COVER PAGE

EASTERN DISTRICT OF TEXAS

PANTECH CORPORATION AND PANTECH WIRELESS, LLC,
Plaintiffs
v.

ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD.,
Defendant

Case No. 5:22-cv-00069-RWS

REBUTTAL NON-INFRINGEMENT EXPERT REPORT OF APOSTOLOS K. KAKAES, PH.D.

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1. Dr. Cooklev's section V.B.1.c: "[1.e] receive uplink scheduling information from the base station" 68

2. Dr. Cooklev's section V.B.1.d: "[1.f] wherein the uplink scheduling information includes a H-ARQ process identification for the H-ARQ process; and" 69

3. Dr. Cooklev's section V.B.1.e: "[1.g] determine whether to retransmit the data block based on the received uplink

scheduling information and not based on whether the WTRU has received a negative acknowledgement (NACK) from the base station," 72

4. Dr. Cooklev's Section V.B.2.a: [2.pre] "The WTRU of claim 1" 75

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performance metrics are met is necessarily that described in the Technical Specifications. An implementer is free to use whatever implementation the implementer wishes to meet these requirements. The patent, on the other hand, typically requires certain steps or functions be performed in accordance with the alleged invention. Thus, a device may well conform to the Technical Specifications requirements, but not operate in accordance with them.

32. Dr. Cooklev has failed to show that "the claims have been shown to cover the standard" as he indicates is required. Cooklev, para 37.

33. With respect to patent exhaustion, Dr. Cooklev never shows how the Asserted Patents are implemented independently on the Accused Products from any base station, [redacted]. Indeed, the Asserted patents include apparatus claims and certain of the Asserted Patents further include base station claims. However, as discussed in my opening expert report on invalidity of the Asserted Patents, all of the claims of the Asserted Patents require use of and interaction with a base station.

34. For the reasons explained below, it is my opinion that Dr. Cooklev has not shown that any of the accused devices infringe any of the asserted claims. However, when consider the exhaustion issue, I will assume that infringement has been shown.

35. All claims of the ’839 patent require the presence and use of a base station that operates according to the LTE specifications.

36. Assuming infringement has been shown, with respect to Claim 1, which is a method claim, a base station must perform the recited limitations in order for a UE to receive the appropriate PHICH.

37. Each of the recited limitations required for performing the claimed method require that the base station perform said limitation. For example, a base station **transmitting** the PHICH must determine “indexes of resource element groups in which the PHICH is transmitted”.

38. Since the transmission is performed by the base station, it is the base station that must also map “the PHICH to at least one OFDM symbols according to the determined indexes”.

39. Since “said indexes are determined according to” specific requirements of the claim, the base station must adhere to these requirements when making the determination as discussed above.

40. The fact that performing the method as claimed in claim 1 requires a base station is further confirmed by independent claim 5 which claims a base station. Claim 5 is an apparatus claim having requirements that parallel the limitations of claim 1.

41. Claim 9 is an apparatus claim paralleling method claim 1.

42. Claim 9 also requires a base station as discussed above in the context of claims 1 and 5. For example, the claimed "mobile station" could not have a "processor configured to determine indexes of resource element groups in which the PHICH is transmitted, and decode the PHICH mapped to at least one OFDM symbols according to the determined indexes" if a base station were not present having previously transmitted both the PHICH as well as other information required for making said determination and decoding, e.g., (1) the transmission of the Physical Control Format Indicator Channel (PCFICH) which indicates the upper bound on how many symbols can be used for the PHICH and/or (2) the indication as to whether "normal" or "extended" PHICH is being used as discussed above.

43. The '247 patent has two independent claims, namely claim 1, an apparatus claims, and claim 11, a method claim corresponding to the method claimed in claim 1. Both claims require a base station. To the extent one argues that a mobile device operating according to the LTE or 5G specifications, said base station would also necessarily operate according to the LTE or 5G specifications respectively, as I explain below.

44. Assuming infringement has been shown, with respect to claim 1, the claimed WTRU would be required to "transmit, using a hybrid automatic repeat request (H-ARQ) process, a data block **to a base station**" (emphasis added; at

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8:35-36). A POSITA would understand that enabling such a transmission requires the presence of a base station and the WTRU having received relevant information from said base station. This includes a number of parameters determined by the base station that are relevant to the communication between the base station and the WTRU, for example receiving the PCFICH discussed above in the context of the '839 patent. The PCFICH indicates to the WTRU the number of symbols used by the base station for transmitting the DCI (by the base station) which is necessary (but not sufficient) information for the WTRU to receive before it can transmit data to the base station; with respect to the control format indicator, TS 36.212 explains that "[d]ata arrives each subframe to the coding unit in the form of an indicator for the time span, in units of OFDM symbols, of the DCI in that subframe". (*See* Ex. 1013 (TS 36.212) at section 5.3.4).

45. Additional communication between the base station and the WTRU is required. For example the WTRU must be synchronized with the base station, which is achieved by transmissions by the base station and correspond receptions by the WTRU as well as transmissions by the WTRU and receptions by the base station.

46. For example, TS 38.201 (henceforth "Exhibit 1030"), section 4.2.4, provides a high level summary of the procedures covered by the physical layer, as shown below:

> 4.2.4 Physical layer procedures
>
> There are several Physical layer procedures involved. Such procedures covered by the physical layer are;
>
> - Cell search
> - Power control
> - Uplink synchronisation and Uplink timing control
> - Random access related procedures
> - HARQ related procedures
> - Beam management and CSI related procedures
> - Sidelink related procedures
> - Channel access procedures
>
> Through the control of physical layer resources in the frequency domain as well as in the time and power domains, implicit support of interference coordination is provided in NR.

47. Thus, for example, performing the "Cell search" procedure (by a UE), and identifying a base station with which the UE can communicate require the presence of at least one 5G base station. Another example, much as in the case of 4G, "Uplink synchronization and Uplink timing control" requires that a UE receive information from a base station with which the UE needs to be synchronized.

48. In short, the above limitation requires the presence of and actions by a 4G base station for 4G UE to communicate with and/or a 5G base station for a 5G UE to communicate with.

49. Similarly, the limitation "receive uplink scheduling information **from the base station**" plainly and clearly indicates that the base station must transmit the claimed uplink scheduling information.

50. Just as plain and clear is the requirement in the next limitation, i.e., that "the WTRU has received a negative acknowledgement (NACK) **from the base station**".

51. The above makes it clear that a base station operating according to the LTE specifications or the 5G specifications is required in order for a mobile device to also operate according to the LTE or the 5G specifications respectively and meet the limitations of claims 1 and 11.

52. All the claims on the ’954 patent require the presence and use of a base station operating according to the LTE specifications, as I detail below.

53. Specifically, claim 1 requires a number of limitations each one of which independently and all of them collectively necessitate the presence and use of an LTE base station.

54. Claim 1 requires “receiving, at the UE, a Radio Resource Control (RRC) message….which has been set by an evolved Node B (eNB)”. It is apparent and indisputable that an LTE base station (and eNB) is necessary in order for this limitation to be met.

55. Similarly, the limitation “receiving, at the UE, information indicating a random access preamble” would be understood by a POSITA to require a base station, as the UE receives all its information from a base station, thus in order for the reception (by the UE) to be possible, a transmission by a base station must take place.

56. The following limitation also requires an LTE base station. The limitation requires that the UE transmit the random access preamble “through one

or more CCs" and the claim requires that the CCs belong to uplink timing groups which have been "set by an evolved Node B (eNB)".

57. In an analogous fashion, the next limitation also require the presence and usage of an LTE base station since it is required that the UE receive "a random access response through the primary CC" and the primary CC is transmitted by an eNB.

58. Finally, so does the next limitation as it requires that "each TA value is transmitted from the eNB".

59. A POSITA would understand that the claim requires the presence of an LTE base station else the specific limitation individually and the claim in total could not possibly be practiced by this method claim.

60. With respect to the UE apparatus claim 6, the claimed processor could not be configured to meet the corresponding "cause" limitations without the presence of an eNB, as I explain above with respect to claim 1.

61. With respect to the next independent claim, claim 11, it is clear that an eNB is required to practice this method claim as all of the limitations of this claim are directed to the eNB.

62. Finally, the corresponding apparatus claim, claim 16, is also directed to an eNB, thus clearly an eNB is required for claim 16.

63. Further regarding patent exhaustion of the Asserted Patents, Dr. Cooklev alleges that OnePlus has not proven whether the Accused Products are [redacted]. This is again not the case because OnePlus has obtained information regarding 4G and 5G base station manufacturers and data usage [redacted] which show all base stations used by those companies and their respective data usage over time. As can be seen from the cited documents, [redacted] Accordingly, most of the use of the Accused Devices in the U.S. [redacted].

64. With respect to AT&T, I note that similar data from Verizon and T-Mobile was not provided from AT&T. However, based on a simple internet search, articles are present showing the composition of 5G base station manufacturers for AT&T, which show that [redacted] *See* < https://www.fiercewireless.com/5g/at-t-names-samsung-ericsson-and-nokia-as-5g-equipment-suppliers#:~:text=AT%26T%20announced%20Monday%20morning%20that,techn

ology%20and%20its%20spectrum%20strategy.>. Indeed, additional research indicates that [redacted]. *See* < https://www.telecomstechnews.com/news/2018/sep/26/samsung-nokia-ericsson-att-basestation/>. The article from telecomtechnews indicates that this position of [redacted]. Accordingly, based on publicly available data, AT&T's 4G and 5G network is composed of base stations provided by one or more of [redacted].

65. It is further my understanding, from conversations with the lawyers for OnePlus, that a defense of patent exhaustion applies when a patent owner sells or licenses a patented product, in which case the patent owner can no longer control the subsequent use or disposition of that product. I have further been informed that [redacted] Therefore, because a base station is required to practice all claims of the Asserted Patents, [redacted]

[redacted] it is my opinion that Pantech's rights in the Asserted Patents are exhausted.

66. At paragraphs 103 – 114 Dr. Cooklev provides an overview of the then-existing structure of the PHICH (Physical HARQ Indicator Channel). At paragraph 106, Dr. Cooklev states that "PHICH is carried by the first symbol of each subframe" (Cooklev, paragraph 106). This statement is susceptible to at least two different interpretations, thus I find it necessary to clarify. While it is true that, if a PHICH is present, some of the resource elements of the first symbol will contain PHICH information, the PHICH information is not limited to be in the first symbol. The PHCIH may be entirely contained in the first symbol (which is typically numbered as "symbol number 0"), but it may also be present in the 2nd symbol (i.e., "symbol number 1" and also may be in the first, the second and the third symbol, i.e., symbol number 0, symbol number 1, and symbol number 2). This is particularly relevant to the claims of the '839 patent, as I will fully explain below with respect to Dr. Cooklev's Appendix A.

67. In paragraphs 132 - 182 Dr. Cooklev provides a very high level discussion of the evolution of mobile communications. It is true that each "generation" provided increased flexibility, benefits, and performance improvements over those of the previous generation. The same is true of intra-

282. As I mentioned above in the context of the '839 patent and the '954 patent, similar to expanding lanes in a highway, the 5G standards expanded the bandwidth available to transmit data as compared to 4G/LTE. The primary benefits of 5G come from the increased available bandwidth. The patented features, at best, provide tangential benefits to the 5G standards.

283. Thus, the value of the alleged invention of the '247 Asserted Patent is, at best, very low for at least the above reasons.

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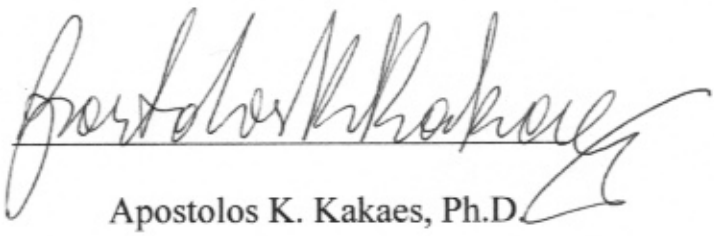
284. I reserve the right to supplement my opinions in the future to respond to arguments that Pantech raises and to take into account new information as it becomes available to me.

Dated: October 27, 2023



Apostolos K. Kakaes, Ph.D.